DCLU

Director's Rule 8-2002

Applicant:	Page	Supersedes:
City of Seattle Department of Design, Construction and Land Use	1 of 9	4-2001
	Publication: 7/25/02	**Effective:** 9/10/02
Subject: Alteration and Repair of Unreinforced Masonry Chimneys	**Code and Section Reference:** Seattle Building Code	
	Type of Rule: Code Interpretation	
	Ordinance Authority: SMC 3.06.040	
Index: Seattle Building Code	**Approved** (signature on file) Diane M. Sugimura, Acting Director	**Date** 9/9/02

Background:

Many unreinforced masonry chimneys were heavily damaged in the Nisqually Earthquake of 2001, creating a falling hazard to people and property. Over the years, the same types of chimneys were also heavily damaged in other large and moderate earthquakes on the West Coast. Some jurisdictions in California have required damaged unreinforced masonry chimneys to be demolished and replaced with a factory-built metal chimney. However, because earthquakes are not as frequent in this state as in California, DCLU does not feel that completely removing unreinforced masonry chimneys is necessary.

As a result of the damage caused to unreinforced masonry chimneys in the Nisqually Earthquake, DCLU instituted a policy to mitigate this known hazard by requiring damaged masonry chimneys be reinforced, braced, removed, or replaced with a factory-built metal chimney. DCLU believes that applying the standards of this rule to all alterations and repairs of existing chimneys will enhance life safety, since chimneys meeting standards such as these have performed better in previous earthquakes

WARNING: Chimneys may be used for venting more than one appliance. For example, the same chimney may be used for both a gas fireplace and a gas furnace. If a decision is made to remove or cap a chimney, it is important to verify first that it is not needed to vent an appliance.

RULE.

A. Policies for repairs and alterations.

1. If the cost to the owner for chimney alterations or repairs is less than $4000, a permit is not required. However, even if a permit is not required for the work, all work must conform to the requirements in this rule. (See 1997 Seattle Building Code, Section 106.2).

   Exception: Minor patching does not require a permit, and need not comply with this rule.

2. Where chimney alterations or repairs extend below the top of the smoke chamber, the smoke chamber and the chimney must be entirely rebuilt in full compliance with current code requirements. A building permit is required regardless of the cost of the work, and permit and plan review fees will be based on the value of construction. If the chimney extends more than 12 feet above the roof line, an engineer must design the chimney and its connections to the building.

3. All chimney alterations or repairs either must be done with reinforced masonry or the chimney must be replaced with a factory-built metal chimney.

   Exceptions:

   1. Where repair work is confined to the top 2 feet of the chimney, the repaired portion may be replaced in kind, provided that chimneys extending more than 12 feet in height above the roof must be externally braced to the roof structure.

   2. Where the existing chimney is of a size that cannot be reinforced, it may be rebuilt using unreinforced masonry provided that chimneys more than 3 feet in height above the roof must be externally braced to the roof structure.

4. All chimneys that extend more than 3 feet in height above the roof must be supported at a minimum of two points, unless the provisions of Exception 1 to Section A.3 of this rule apply.

5. Any existing unreinforced masonry that is to remain must be inspected for damage or deterioration, and tuckpointed as needed.

6. The permit fee shall be the minimum required for STFI permits, if DCLU standard details are used or if an engineered design is used which has no correction comments. An additional plan review fee will be added if written correction comments are necessary on engineered designs.

B. Options for Repair and Alteration.

Option 1 — support at floor and roof lines. Demolish the existing chimney to the floor line below the roof. Rebuild from that point upward in reinforced masonry, in compliance with Attachment A "Typical Masonry Fireplace Chimney Repair" standard detail. New rebar shall be dowelled into the existing chimney at least 12 inches, or Attachment B "Concrete Bond Beam Anchorage Into Building" standard detail shall be used. Tie the reinforced portion to the building at the roof line and the floor line below the roof.

Option 2 — support at top of smoke chamber, floors, and roof. Demolish the existing chimney to the top of the fireplace smoke chamber. Rebuild from that point upward in reinforced masonry in compliance with Attachment A. New rebar shall be dowelled into the existing chimney at least 12 inches, or Attachment B shall be used. Tie the reinforced portion to the building at the roof line and any floor line.

Option 3 — brace to roof and support at roof line. Demolish the existing chimney to just below the roof line. Rebuild from that point upward in reinforced masonry in compliance with Attachment A. New rebar shall be dowelled into the existing chimney at least 12 inches, or Attachment B shall be used. Tie the chimney to the building at the roof line, and provide an external brace in the upper portion of the chimney in accordance with Attachment C "Typical Masonry Chimney Roof Brace" standard detail. Where the existing chimney is of a size that cannot be reinforced, it may be rebuilt using unreinforced masonry. Unreinforced masonry chimneys less than 3 feet in height above the roof need not be braced.

Option 4 — replacement with factory built metal chimney. Demolish the existing chimney to the top of the smoke chamber. Add a UL or equivalent listed metal chimney transition assembly and a factory-built metal chimney above in accordance with Attachment D "Transition from Masonry Fireplace To Metal Chimney" and Attachment E "Adapter Kit, Transition from Masonry Fireplace To Metal Chimney" standard details. Tie the metal chimney at the roof level and brace the upper portion back to the roof for extensions according to the manufacturer's recommendations. A metal stud chase may be built to enclose the metal chimney, as shown in Attachment F "Steel Stud Chase" standard detail.

Option 5 — engineered design. Engineered designs may be submitted for the entire chimney or portions of the chimney, including bracing.

C. Inspections of Chimney Work Under a Building Permit.

The owner or contractor must call DCLU for inspections at the following times:

1. when the chimney demolition is completed and the contractor is ready to start;
2. prior to placing concrete for the bond beam (Attachment B); and
3. when the work is complete.